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United States' Astronomical Expedition to Chile.

IN a former number, notice was given of an astronomical expedition to Chile for the purpose of determining the parallaxes of *Mars* and *Venus* near opposition, and thence concluding the parallax of the sun. Dr. Gerling, of Marburg, suggested this undertaking in the *Astronomische Nachrichten*, and Lieut. Gilliss, U.S.N. has been appointed to the charge of it. Instructions have been drawn up by Lieut. M. F. Maury, U.S.N. Superintendent of the National Observatory; and copies of this circular have been forwarded by Lieut. Gilliss to most of the observatories in England,* asking for such co-operation as it may be thought expedient to afford.

Lieut. Gilliss proposes to measure the position of the planets with respect to certain fixed stars at given dates which are carefully tabulated. The planets and stars are also laid down on charts on a convenient scale. Corresponding observations on the same days with the same stars, and meridian observations of the planets, are wanted.

"Those astronomers who are disposed to forward the objects of the expedition, so far as to co-operate with it in conducting an auxiliary series of observations, will perceive that the results of their labours will be enhanced by using, wherever practicable, the stars of comparison which Lieut. Gilliss has selected, and which are given in Tables I. and II. of the circular, and by following the plan of observations proposed by him and herein explained.

"Each co-labourer is requested to send annually to the Superintendent of the National Observatory, at Washington, his observations, with an account of the instruments with which they were made, together with such other information in relation thereto as is necessary to a full understanding and appreciation of them and the results arising therefrom."

As some delay may occur in forwarding copies of the circular to observers who would wish to join in the operation, the approximate places of the following stars are extracted from the circular, for comparison with *Mars* in November next:—

* There are a few spare copies of the circular which will be given to any gentleman, on application, who possesses the inclination and astronomical means of making corresponding observations.

	Mag.	R.A. h m s	N. Decl. ° ′ ″	Days of Comp.
Bessel Z. 348	9	6 18 48	24 20 52	1, 2
—	9	27 55	31 37	3, 4, 5, 6
—	7·8	29 6	35 6	7, 8
B.A.C. 2154	6·7	28 15	42 32	9, 10, 11
H.C. 12557	9	25 51	44 42	12, 13
Bessel Z. 348	9	28 47	24 58 22	14, 15
H.C. 12554	8	25 48	25 2 4	16, 17
Bessel Z. 348	9	19 54	9 35	18, 19
— 523	9	21 15	13 36	20, 21
— 523*	9	24 2	22 24	22
— 523	9	18 9	26 47	23
— 523	9	21 45	30 43	24, 25
H.C. 12237	9	16 51	35 35	26
— 12240	8	16 58	40 39	27, 28
— 12041	8	11 18	40 19	29
Bessel Z. 405	9	6 11 37	25 45 34	30

The place of the planet may be taken from the *Nautical Almanac*.†

* Double, observe south preceding star.

† The attention of observers is particularly directed to the presumed variability of the *apparent* diameter of *Venus*, from whatever cause this may arise. It is recommended that the diameter of the planet should be very carefully measured before and after each set of comparisons with the neighbouring star. It would be prudent to make similar measures of *Mars* so as to have the power of eliminating the effect of any telescopic or personal differences.

NEPTUNE.

LIVERPOOL. Equatoreal. (Mr. Hartnup.)

1849.	Greenwich M.T. h m s	R.A. h m s	N.P.D. ° ′ ″	Star.
Aug. 21	12 41 3·4	22 22 56·89	100 53 33·1	B.A.C. 7918
Sept. 5	10 50 40·5	21 23·77	101 2 32·3	B.A.C. 7773, 7892
7	10 38 6·9	22 21 11·61	101 1 41·8	— — —

" The observations are corrected for refraction and parallax.

" 7892 B.A.C. is a neat double star. The components are of equal brightness, differing in R.A. about $0^{s}\cdot5$, and in N.P.D. about 3″. The comparison here made is with the star which precedes in R.A."

HAMBURG. (M. Rümker.)

1849.	Hamburg M.T. h m s	R.A. ° ′ ″	Decl. ° ′ ″	
July 25	11 57 33·6	336 23 3·3	−10 38 2·0	Equat.
28	11 36 4·3	19 5·7	39 37·3	—
30	11 51 51·0	16 28·6	40 40·2	—
31	13 46 52·6	15 0·2	41 20·7	Merid.
Aug. 1	11 1 30·6	336 13 49·7	−10 41 44·1	Equat.

Lassell's Satellite of Neptune.

LIVERPOOL. (Mr. Lassell.)

1849.	Green. M.T. h m	Position. ° ′	No. Obs.	Distance. ″	No. Obs.
Sept. 8*	12 15	39 30	5		
	12 35			18·28	4
17	8 25	216 11	3		
	8 45			14·93	2

* "Sky bright and circumstances favourable; power 366. The distances on Sept. 8 seem large, but I thought them good at the time."

METIS.

CAMBRIDGE. Northumberland Equatoreal. (Prof. Challis.)

1849.	Green. M.T. h m s	R.A. h m s	N.P.D. ° ′ ″	No. of Obs. R.A.	No. of Obs. N.P.D.	Star.
June 13	13 41 46·4	22 35 53·53	105 37 16·5	1	1	τ' Aquarii.
	44 12·9	53·36	11·2	2	1	H.C. 44292
22	13 36 16·1	22 40 46·18	105 39 47·0	10	10	τ' Aquarii.

Corrections for parallax, computed from Mr. Graham's first ephemeris, have been applied. The place of *τ' Aquarii* is taken from the British Association Catalogue, and that of the other star from Lalande.

HAMBURG. Equatoreal. (M. Rümker.)

1849.	Hamburg M.T. h m s	R.A. ° ′ ″	Decl. ° ′ ″	
July 22	12 51 0·9	340 37 41·8	−17 18 4·7	
25	13 24 56·1	340 19 57·0	35 20·7	
28	12 18 38·0	339 58 44·9	17 52 56·8	
30	12 40 15·2	42 13·7	18 5 15·5	
31	13 59 59·8	32 18·9::	11 48·2::	
Aug. 1	11 26 24·8	339 25 4·4::	18 17 16·3::	
11	11 38 26·5	337 34 45·0	19 23 41·1	
13	12 59 15·5	.....	−19 37 17·9	Mer. Circle.
	14 4 46·1	337 7 29·7	28·7	

CERES.

LIVERPOOL. Equatoreal. (Mr. Hartnup.)

1849.	R.A. h m s	N.P.D. ° ′ ″	Comp^{d}—Obs^{d}. R.A. s	N.P.D. ″	Star.	
July 9	18 18 19·68	118 25 43·9	+11·36	+7·1	B.A.C.6191	
10	17 25·02	28 43·5	11·54	2·9	B.A.C.6191, 6371	
11	16 31·30	31 32·6	11·50	4·4	—	—
13	18 14 46·03	118 36 58·6	+12·64	+5·2	—	—

"For the Liverpool observations of *Pallas* and *Ceres* the equatoreal was firmly clamped in the *meridian*, and used as a *transit-circle*. The observations are corrected for refraction and parallax, and compared with the ephemeris published in the *Nautical Almanac*."

HYGEIA.

CAMBRIDGE. Northumberland Equatoreal. (Prof. Challis.)

1849.	Green. M.T. h m s	R.A. h m s	N.P.D. ° ′ ″	No. of Obs. R.A.	No. of Obs. N.P.D.	Star.
May 29	9 44 10·8	12 3 11·23	95 29 50·3	6	2	Bessel, xii. 35
	10 17 5·3	11·49	58·8	9	5	— —
31	10 27 21·2	3 50·26	30 57·3	1	1	B.A.C. 4080
	10 44 6·0	49·14	45·1	10	8	Bessel, xii. 35
June 8	10 44 52·3	7 8·92	95 39 2·2	1	1	B.A.C. 4080
	10 47 44·4	8·17	39 1·6	2	2	Bessel, xii. 35
	11 3 5·6	8·40	38 54·6	5	4	Bessel, xii. 74
22	10 35 40·0	15 41·13	96 12 3·0	6	2	B.A.C. 4171
23	10 23 43·5	16 24·98	15 14·7	5	5	— —
25	10 34 16·6	17 56·47	21 56·4	1	1	— —
27	10 6 27·7	.....	96 28 53·8		2	Bessel, xii. 297
July 6	10 3 29·0	12 27 14·46	97 6 13·2	1	1	B.A.C. 4257

"No correction has been applied for parallax. The places of the stars are adopted from the cited authorities, attention being paid to the *Corrigenda* appended to Weisse's Catalogue. After June 23 the observations were obtained with great difficulty and are somewhat uncertain."

PALLAS.

LIVERPOOL. Equatoreal. (Mr. Hartnup.)

1849.	R.A. h m s	N.P.D. ° ′ ″	Comp^{d}—Obs^{d}. R.A. s	Comp^{d}—Obs^{d}. N.P.D. ″	Star.
July 9	17 30 30·31	66 44 28·0	+0·21	+12·0	B.A.C. 6005
10	29 51·45	51 17·1	−0·23	10·8	— —
11	29 12·82	66 58 21·9	+0·01	7·2	B.A.C. 5883, 6005
13	17 27 58·86	67 13 6·0	+0·09	+ 5·8	— — —

SCHWEIZER'S COMET.

MARKREE. With the Meridian Circle. { E. J. Cooper, Esq. & A. Graham.

1849.	Greenwich M.T. h m s	R.A. h m s	Decl. ° ′ ″	No. of Wires.
April 25	10 56 26·1	12 17 54·33	+12 43 41·4	7
26	10 12 26·2	11 57 47·06	9 49 46·5	7
28	9 23 39·4	11 16 30·49	+ 3 27 11·0	2

Corrected for parallax by Schweizer's elements, *Ast. Nach.* No. 680.

Notes.

April 25. Bisection good; transits uncertain.
28. Very uncertain; hazy.

With the large Equatoreal.

1849.	Greenwich M.T. h m s	R.A. h m s	Decl. ° ′ ″	Relative Weights.	Star of Comp.
April 14	11 38 37·5	14 49 27·06	+27 40 26·8	5·00	*a, b, c*
15	13 18 48·5	40 27·11	27 10 53·4	4·00	*d*
16	12 19 3·0	31 32·38	26 38 5·9	6·00	*e*
17	10 25 32·6	14 22 8·67	26 0 22·3	6·00	*f*
19	12 17 29·3	13 57 31·82	24 5 26·2	3·33	*g*
23	10 46 39·0	12 56 8·10	17 44 3·8	0·75	*h, i*
	12 58 32·3	54 28·91	31 45·1	3·75	*h, i*
24	10 7 37·8	37 59·17	15 26 52·2	3·50	*k*
	12 43 20·9	35 54·89	10 24·0	3·67	*k*
25	9 44 18·8	12 18 38·80	12 49 55·9	5·00	*l, m*
26	9 49 14·8	11 58 7·67	9 52 40·8	3·00	*n*
28	10 2 46·0	11 15 56·15	+ 3 21 46·2	3·33	*o*

Corrected for parallax by Schweizer's elements, *Ast. Nach.* No. 680.

Apparent Places of the Compared Stars and the Authorities.

	R.A. h m s	Decl. ° ′ ″		Relative Weights.	
a	14 49 11·63	+27 44 51·9	Meridian Circle, 1 obs.	3·60	
b	52 36·86	53 35·9	H. C. 27321	0·55	
c	53 23·44	45 34·2	B.Z. 366 ; $14^h\ 51^m\ 31^s{\cdot}63$	0·85	
d	42 29·67	27 5 16·7	Meridian Circle, 2 obs.		
e	35 10·60	26 37 42·9	— —	Adopted this	
	11·11	40·0	B.Z. 365 ; $14^h\ 33^m\ 18^s{\cdot}75$		
f	14 22 55·39	26 0 41·2	Meridian Circle, 1 obs.		
g	13 59 21·53	24 6 41·8	B.Z. 412 ; $13^h\ 58^m\ 47^s{\cdot}96$	1st obs.	2d obs.
h	12 54 8·19	17 34 33·5	— 361 ; 12 52 18·87	0·25	1·25
i	54 47·95	17 36 22·4	— — 12 52 58·67	0·50	2·50
k	37 54·10	15 11 53·7	— 360 ; 12 36 6·08		
l	19 57·52	12 56 1·7	Weisse, 323	2·50	
m	12 20 37·58	12 39 37·3	— 343	2·50	
n	11 57 32·53	9 34 9·8	B.A.C. 4072		
o	11 18 18·34	+ 3 17 5·3	Weisse, 316		

Notes.

April 14. The comet passed over a small star during the observation. This made the observation somewhat difficult and uncertain.

16. Well taken. There seems to-night a greater concentration of the comet's mass. The nucleus very distinct. The coma faint.

17. The comet considerably brighter. The coma much extended, almost fills field of equatoreal, but is very faint. The nucleus very distinct.

23. We cannot depend on this observation; it was made through haze.

28. The nucleus very sharply shewn.

GOUJON'S COMET.

MARKREE. With the Meridian Circle. { E. J. Cooper, Esq. & A. Graham.

1849.	Greenwich M.T. h m s	R.A. h m s	Decl. ° ′ ″	No. of Wires.
April 25	9 21 2·4	11 2 18·31	+ 7 22 14·1	7
26	16 53·2	2 4·90	10 39 42·6	7
27	12 57·6	1 54·79	13 51 38·5	5
28	9 8 45·1	11 1 48·58	+16 56 25·8	7

Corrected for parallax by Weyer's elements.

"These observations cannot be depended on: even with dark field and illuminated wires, the comet was very faint.

With the large Equatoreal.

1849.	Greenwich M.T. h m s	R.A. h m s	Decl. ° ′ ″	Relative Weights.	Star of Comp.
April 24	12 1 40·2	11 2 34·69	+ 4 22 14·7	2·67	*a*
25	11 6 48·2	11 2 18·35	7 37 7·0	3·75	*b*, *c*
26	10 48 33·6	11 2 4·11	10 52 7·1	3·33	*d*
27	10 43 36·6	*e* + 0 6·74	*e* − 1 58·0	3·33	*e*
28	10 28 41·7	*f* − 1 6·33	*f* − 1 47·2	3·33	*f*
May 1	10 15 50·2	11 1 54·22	25 33 50·2	2·67	*g*
3	10 36 38·9	*h* + 0 51·32	*h* + 0 40·5	4·00	*h*
4	11 34 39·8	*i* − 1 46·98	*i* + 1 23·9	2·50 } 3·33	*i*
		k − 2 2·32	*k* − 0 7·4	2·50 }	*k*
7	10 20 1·4	*l* + 0 44·34	*l* − 1 31·7	3·33	*l*
	11 1 52·7	*l* + 0 45·15	*l* + 1 41·3	3·33 } 3·75	*l*
		11 3 45·33	38 54 33·2	2·50 }	*m*
9	11 50 46·1	*n* − 3 41·66	*n* − 8 39·5	3·33 } 3·75	*n*
		o − 4 15·35	*o* −11 36·7	2·50 }	*o*
21	13 20 18·0	*p* − 1 34·79	*p* − 0 4·9	2·50 } 3·33	*p*
		11 15 39·43	56 16 17·8	2·50 }	*q*
24	11 39 8·5	11 19 20·28	58 27 11·3	3·33	*r*
29	13 2 39·1	*s* + 2 7·30	*s* + 5 26·9	2·50 } 3·33	*s*
		t + 0 15·71	*t* + 1 19·3	2·50 }	*t*
31	12 58 26·2	11 29 48·01	62 35 50·2	3·33	*u*
June 5	12 32 46·0	11 38 31·19	64 50 0·8	2·50	*v*
6	11 49 26·1	11 40 22·99	65 13 0·8	3·33	*v*
7	11 35 2·9	11 42 19·07	65 35 34·6	2·50	*v*
8	12 13 26·0	11 44 21·38	65 58 11·8	4·00	*w*, *x*, *y*
12	12 24 47·6	11 52 51·75	67 17 52·3	2·50	*z*
19	12 26 30·6	*a′* − 1 43·97	*a′* −13 34·8	2·50	*a′*
21	12 7 17·6	12 15 13·31	69 37 40·3	2·50	*b′*
23	11 26 14·9	12 20 47·40	70 2 17·5	2·50	*c′*
26	12 0 55·2	12 29 50·58	+70 36 33·1	2·50	*d′*

" Corrected for parallax by Weyer's elements.

"The number preceding a bracket, opposite to any star, is that which should

have been placed in the column "Relative Weights," had the result for the same moment from the accompanying star been rejected.

Apparent Places of Compared Stars and Authorities.

	R.A. h m s	Decl. ° ′ ″		Relative Weights.
a	11 3 35·60	+ 4 19 39·6	Weisse, 42	
b	10 59 3·89	7 30 40·8	— 1069	2·50
c	11 0 25·27	7 23 18·1	— 1096	1·25
d	1 57·57	10 58 25·1	— 10	
e	1 48	14 5	Estimated	
f	2 55	17 8	—	
g	0 43·59	25 28 24·5	B.A.C. 3809	
h	1 26	30 33	Estimated	
i	4 22	32 54	—	1·67
k	4 37	32 55	—	1·67
l	3 0	38 53	—	2·50 } 2d
m	2 26·07	38 45 1·8	B.Z. 411, $11^h\ 1^m\ 35^s{\cdot}08$	1·25 } obs.
n	8 33	42 33	Estimated	2·50
o	9 7	42 36	—	1·25
p	17 14	56 16	—	1·67
q	11 19 41·05	56 30 2·5	A.Z. 100; 23 (*Ast. N.* No. 683)	1·67
r	19 5·21	58 34 32·1	— 199; 16 (*Ast. N.* 682, 683)	
s	24 28	61 28	Estimated	
t	26 19	61 32	—	1·67
u	29 51·63	62 28 15·9	A.Z. 184; 44 (*Ast. N.* 682)	
v	38 48·33	65 14 6·4	Radcliff, II. 566, & VII. 846	
	48·29	6·4	—	
	48·25	6·4	—	2·00
w	45 20·02	65 53 45·4	*Ast. Nach.* 682	1·00
x	46 13·85	66 3 51·4	—	1·00
y	48 37·85	66 5 13·5	— A.Z. 186; 56	
z	11 53 34·53	66 58 0·6	— — 189; 44	
a′	12 11 36	69 24	Estimated	
b′	15 48·43	69 21 56·1	*Ast. Nach.* 682	
c′	23 27·01	70 2 30·2	B.A.C. 4222	
d′	12 26 59·71	+ 70 37 29·4	— 4239	

Notes.

April 24. This comet is brighter than Schweizer's. The latter has a nebulosity from three to four times greater than the former, and nearly concentric. Goujon's comet has a short tail in the direction opposite to the sun.
26. A small star central at $12^h\ 20^m\ 49^s$ Markree Sid. Time.
May 21. Occasional gusts of wind may have affected the observation to-night.
June 23. Excessively faint. The first two sets are little better than guesses.
26. Faint, but better shewn than on the 23d.

The stars marked A.Z. (Argelander's Zones) have been taken from the *Ast. Nach.* We have not access to the original. It is probable that some of the stars of which rough places are given, have also been observed by Professor Argelander.

CAMBRIDGE. Northumberland Equatoreal. (Prof. Challis.)

1849.	Green. M.T. h m s	R.A. h m s	N.P.D. ° ′ ″	No. of Obs. R.A.	No. of Obs. N.P.D.	
Sept. 11	12 0 38·4	18 7 48·47	28 43 30·4	8	9	Arg. Z. 125; 144
17	9 12 25·9	18 27 51·08	31 14 2·2	3	3	B.A.C. 6289
	11 0 1·4	28 3·71	15 55·4	8	8	— —
19	9 58 36·6	18 34 25·16	32 7 33·6	3	3	Arg. Z. 20; 30

"Parallax has not been applied. The places of the stars have been adopted from the authorities cited. The second series on Sept. 17 was taken by transits at two parallel bars, inclined alternately $+45°$ and $-45°$ to the parallel of declination. The comet was extremely faint.

LIVERPOOL. 20-foot Reflector. (Mr. Lassell.)

1849.	Greenwich M.T. h m s	R.A. Comet. m s	No. Obs.	N.P.D. Comet. ′ ″	No. Obs.
July 13	12 40 42·80	*a* +4 49·80	6	*a* −0 35·15	6
31	12 29 5·21	*b* −1 57·70	6	*b* +0 47·32	6
Sept. 11	13 14 2·3	*c* −1 10·67	6		
	14 31·6			*c* −5 52·0	6
17	9 48 15·0	*d* −0 46·64	10		
	47 52·5			*d* +0 43·3	10

"The observations not corrected for refraction or parallax; power 219.

	Mag.	Mean R.A. h m s	Mean N.P.D. ° ′ ″	
a	6	13 27 55·54	17 25 36·8	= Arg. Zones 200; 104
b	6	15 0 17·81	17 38 39·0	= B.A.C. 4978, & Rad. VI. 1187; VII. 1019
c	6·7	18 8·9	28 50·7	
d	8	18 28·7	31 15·6	

LIVERPOOL. Equatoreal. (Mr. Hartnup.)

1849.	Greenwich M.T. h m s	R.A. h m s	Log $\frac{p}{P}$	N.P.D. ° ′ ″	Log $\frac{q}{P}$	Star B.A.C.
July 8	11 24 28·2	13 11 51·93	+9·104	17 47 9·3	−9·064	4506
	11 47 24·6	56·06	9·112	4·4	9·236	—
13	12 24 45·0	13 32 35·26	9·124	17 25 9·4	9·409	—
	12 49 16·5	41·23	9·120	24 59·1	9·503	—
Aug. 16	13 8 30·1	16 18 45·72	9·062	20 10 50·9	9·504	5628
18	11 16 40·9	28 0·60	9·020	20 37 55·4	8·845	5514
21	11 0 38·1	16 41 58·16	8·983	21 24 15·4	8·453	5545
	11 29 46·2	42 5·46	9·008	38·3	8·965	—
Sept. 8	10 9 28·8	17 56 41·94	8·807	27 28 23·0	8·147	6224
	10 43 31·3	45·69	8·857	29 13·2	8·883	—
17	10 20 19·6	18 28 0·50	8·780	31 15 4·5	8·993	6395
	11 14 57·1	6·95	+8·844	54·7	−9·308	—

"The observations are corrected for refraction. The corrections to be applied for parallax in time and arc are represented by p and q. P is the equatoreal horizontal parallax. The observations very good, with the exception of the 16th Aug. The stellar nucleus was visible in this telescope on the 21st August; the light pretty equally diffused around the nucleus."

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At p. 61, paragraph 5, substitute as follows :—"General Hodgson was appointed surveyor-general of India in May 1821, by Lord Hastings, when Governor-General, but not confirmed by the Directors, who considered the patronage to be in their hands. In lieu of this he was appointed revenue surveyor-general. In 1826 he was appointed surveyor-general, and held that office till 1827, when grief for the loss of his beloved wife induced him to resign, and to return to England."

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Jan. 15, *dele* the four lines which are repeated.
Towards the bottom, *for* five transits, *read* six.

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— 97, March 1, Comp^d.—Obs^d. R.A. *for* $-1^s{\cdot}45$, *read* $-1^s{\cdot}37$.

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— 139. Capt. Shea *presented* his book of drawings.

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— — — *for* L′+, *read* L′−.

— 197, 198, *for* M. Savory, *read* M. Savary.

— 210, line 18, *for* bevilled, *read* bevelled.

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AND

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